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EXAMINER

DAYE, CHELCIE L

ART UNIT

PAPER NUMBER

2161

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/01/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/646,472

Applicant(s)

WAKEAM ET AL.

Examiner

Chelcie Daye

Art Unit

2161

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7-12 and 19-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7-12 and 19-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is issued in response to applicant's amendment filed September 11, 2006.
2. Claims 7-12 and 19-30 are presented. Claims 19-30 are added and claims 1-6 and 13-18 are cancelled.
3. Claims 7-12 and 19-30 are pending.

Continued Examination Under 37 CFR 1.114.

4. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on September 11, 2006 has been entered.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 7,9,19,21,25, and 27, are rejected under 35 U.S.C. 103(a) as being unpatentable over Holenstein (US Patent Application No. 20020133507) filed on March 29, 2002 in view of Neeman (US Patent No. 5,588,147) filed on January 14, 1994.

Regarding Claims 7,19, and 25, Holenstein discloses a method of reconciling a first data structure stored on a computer readable medium with a second data structure stored on a computer readable medium, comprising:

determining which node of the second data structure has received a change from a corresponding node in the first data structure (Fig.1; [0025], lines 1-6, Holenstein)¹; and

for each node in the second data structure determined to have received a change from a corresponding node in the first data structure (Fig.1; [0027], lines 1-4, and [0036], lines 1-2, Holenstein)², attempting to access the corresponding node in the first data structure ([0052-0053], Holenstein); if the corresponding node in the first data structure is inaccessible, preventing the change from occurring in the second data structure ([0157], lines 10-19, Holenstein).

Holenstein's replication system does recognize that while performing dual writes and having to reconcile data structures collisions will occur. However, Holenstein

¹ Examiner Notes: Fig.1 shows data structures 14 and 26, wherein the data structures have nodes 12 and 24. The collector "reads" (i.e. determines) the changes between the corresponding nodes.

² Examiner Notes: The consumer "applies" (i.e. accesses) the changes passed from the collector, which comes from the first data structure and passed to the second data structure. The transaction receiver verifies that the information was received from the corresponding data structure.

is silent with respect to, if the corresponding node in the first data structure is accessible, determining, if the change to the second data structure creates a mandatory collision or a discretionary collision, if the change to the second data structure creates a mandatory collision, preventing the change from occurring, if the change to the second data structure creates a discretionary collision, determining if the discretionary collision is forbidden by collision criteria, if the discretionary collision is not forbidden by the collision criteria, making the change to the corresponding node in the first data structure, and if the discretionary collision is forbidden by the collision criteria, preventing the change from occurring. On the other hand, Neeman discloses if the corresponding node in the first data structure can be accessed, determining, if the change to the second data structure creates a mandatory collision or a discretionary collision³ (column 8, lines 31-36, Neeman), if the change to the second data structure creates a mandatory collision, preventing the change from occurring, if the change to the second data structure creates a discretionary collision, determining if the discretionary collision is forbidden by collision criteria (column 8, lines 21-31, Neeman)⁴, and if the discretionary collision is not forbidden by the collision criteria, making the change to the corresponding node in the first data structure (column 8, lines 37-47, Neeman), and if the discretionary collision is forbidden by

³ Examiner Notes: The namespace collision happens when an object is renamed to have the same name as another object, making the collision "discretionary" as to whether or not to permit the change. Therefore, the "namespace collision" corresponds to discretionary collision.

⁴ Examiner Notes: The criteria for the collision are represented by the rules and the association of the changes with the names, determine if the change is resolved or not (i.e. if not then the collision is forbidden).

the collision criteria, preventing the change from occurring ([0099], Holenstein). It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate Neeman's teachings into the Holenstein system. A skilled artisan would have been motivated to combine as suggested by Neeman at columns 5 and 6, lines 66-67 and 1-6, in order to provide load balancing by having more than one copy of an object stored across the system and availability by allowing multiple copies of important objects to be distributed across the system. As a result, by recognizing the possible collisions, it increases the fault resilience of the system.

Regarding Claims 9,21, and 27, the combination of Holenstein in view of Neeman, discloses the method further comprising identifying nodes in the first data structure for which a change to the second data structure (Fig.1; [0025], lines 1-6, and [0036], lines 1-2, Holenstein) creates a collision to a software application maintaining the first data structure ([0134], lines 1-5, Holenstein).

7. Claims 8,20, and 26, are rejected under 35 U.S.C. 103(a) as being unpatentable over Holenstein (US Patent Application No. 20020133507) filed on March 29, 2002, in view of Neeman (US Patent No. 5,588,147) filed on January 14, 1994, and further in view of Fujihara (US Patent Application No. 20020191452) published December 19, 2002.

Regarding Claims 8,20, and 26, the combination of Holenstein in view of Neeman, disclose all of the claimed subject matter as stated above. However, the combination of Holenstein in view of Neeman, are silent with respect to deleting empty nodes from the first data structure. On the other hand, Fujihara discloses deleting empty nodes from the first data structure ([0116-0117], Fujihara)⁵. It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate Fujihara's teachings into the Holenstein in view of Neeman system. A skilled artisan would have been motivated to combine as suggested by Fujihara at paragraphs [0015-0017], in order to maintain and manage a plurality of data structures more efficiently. As a result of the maintenance and management the data structure will be assured to have the least amount of traffic and calculation time.

8. Claims 10-12,22-24, and 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Holenstein (US Patent Application No. 20020133507) filed on March 29, 2002, in view of Neeman (US Patent No. 5,588,147) filed on January 14, 1994, and further in view of "Robust Annotation Positioning in Digital Documents", by Gupta, Brush, Barger, and Cadiz, Published on September 22, 2000, referred to as "Gupta" hereinafter.

⁵ Examiner Notes: Further explanations about the node being empty if label with 0 (nil) can be found within paragraph [0084].

Regarding Claims 10,22, and 28, the combination of Holenstein in view of Neeman, disclose all of the claimed subject matter. However, Holenstein in view of Neeman do not explicitly disclose the method wherein the collision criteria:

prohibits ink strokes from being added to a leaf node below a pinned node,

prohibits ink strokes from being removed from a leaf node below the pinned node,

prohibits adding leaf nodes below the pinned node,

prohibits removing leaf nodes below the pinned node, and

prohibits re-parenting of leaf nodes below the pinned node. On the other hand, Gupta discloses prohibits ink strokes from being added (pg.7, [5.3.1], lines 5-8, Gupta)⁶ to a leaf node below a pinned node (pg.4, [3.2], line 12, Gupta)⁷, prohibits ink strokes from being removed (pg.7, [5.3.1], lines 5-8, Gupta) from a leaf node below the pinned node (pg.4, [3.2], line 12, Gupta), prohibits adding (pg.7, [5.3.1], lines 5-8, Gupta) leaf nodes below the pinned node (pg.4, [3.2], line 12, Gupta), prohibits removing (pg.7, [5.3.1], lines 5-8, Gupta) leaf nodes below the pinned node (pg.4, [3.2], line 12, Gupta), and prohibits re-parenting (pg.6, [5.1.1], lines 11-14, Gupta)⁸ of leaf nodes below the pinned node (pg.4, [3.2], line

⁶ Examiner Notes: "Same" means when the text does not move or change; this corresponds to no modifications such as adding or removing of other nodes. Also, ink strokes can be represented as nodes and nodes can be represented as ink strokes.

⁷ Examiner Notes: Anchor text is the text, which identifies the nodes position (pg.4, [3.2.1], lines 1-2, Gupta). The anchor text corresponds with pinned node, because the anchored text is unchangeable.

⁸ Examiner Notes: Prohibiting re-parenting corresponds to "orphaned", because if an annotation (i.e. node) is unable to find a location it is left without a parent (i.e. orphaned), which means it does not get a new parent node.

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12, Gupta). It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate Neeman's collision information into Holenstein's replication system. A skilled artisan would have been motivated combine as suggested by Gupta at page 2, column 2 lines 13-17, in order to limit where a stroke can be placed or either drop strokes when documents are changed, which ultimately enhances the performance of the system.

Regarding Claims 11-12, 23-24, and 29-30, the combination of Holenstein in view of Neeman, and further in view of Gupta, disclose the method wherein the collision criteria:

- allows late ink strokes to be added to a leaf node below a pinned node under specified conditions (pg.7, [5.3.3], lines 1-3 and 9-14, Gupta)⁹,

- prohibits ink strokes from being removed (pg.7, [5.3.1], lines 5-8, Gupta) from a leaf node below the pinned node (pg.4, [3.2], line 12, Gupta),

- prohibits adding (pg.7, [5.3.1], lines 5-8, Gupta) leaf nodes below the pinned node (pg.4, [3.2], line 12, Gupta),

- prohibits removing (pg.7, [5.3.1], lines 5-8, Gupta) leaf nodes below the pinned node (pg.4, [3.2], line 12, Gupta), and

- prohibits re-parenting (pg.6, [5.1.1], lines 11-14, Gupta) of leaf nodes below the pinned node (pg.4, [3.2], line 12, Gupta).

Response to Arguments

Applicant argues, Holenstein does not disclose the newly amended limitation of "determining which node of the second data structure has received a change from a corresponding node in the first data structure".

Examiner respectfully disagrees. As stated within the office action, Holenstein discloses within Figure 1, the elements of Node A (item 12) and Node B (item 24), with input device (item 36) and database A (item 14) corresponding to Node A and input device (item 38) and database B (item 26) corresponding to Node B. As such, examiner interprets Node B to be the determined node of the second data structure since it is the node shown and discussed, which received a change from the first data structure. The office action also references paragraph [0025], lines 1-6, wherein each data structure comprises a collector. The responsibility of the collector is to read any audit trail, transaction log file, or a database change queue of a first database, extract information about specific changes to the first database, and pass the information to the corresponding consumer object. Examiner points out that because the collector reads, extracts, and passes the changed information to the corresponding consumer object (the corresponding consumer object (item 32) is contained within the second data structure) discloses the second data structure receiving the change from the first data structure. As a result, examiner believes the newly amended limitation of "determining

⁹ Examiner Notes: The changing of nodes in the updated document is considered "late" because the

which node of the second data structure has received a change from a corresponding node in the first data structure" has been fully disclosed.

Applicant argues, Holenstein does not teach the newly amended limitation of "for each node in the second data structure determined to have received a change from a corresponding node in the first data structure, attempting to access the corresponding node in the first data structure".

Examiner respectfully disagrees. Applicant argues in regards to paragraph [0123] of the Holenstein reference as a justification of why Holenstein does not disclose the limitation of "each node in the second data structure determined to have received a change from a corresponding node in the first data structure, attempting to access the corresponding node in the first data structure". However, paragraph [0123] was never relied upon by the examiner in order to disclose the limitation as argued above. As such, paragraph [0052-0053], discloses data collection techniques which allow for updates and changes to be collected and retained and later accessible to the data structures. Therefore, examiner believes the newly amended limitation to be fully disclosed.

Applicant argues, Holenstein does not teach, "preventing the change from occurring if the corresponding node in the first data structure is inaccessible".

Examiner respectfully disagrees. As stated in the office action, Holenstein discloses at paragraph [0157], wherein a ready to commit token is sent to the originating node (i.e. the first node within the first data structure) upon receipt from the other nodes. However, if the token is not returned to the originating node, then the node has irrecoverable errors and becomes inaccessible, thereby preventing the change from occurring. As such, examiner believes the above stated limitation has been fully disclosed by the combination of Holenstein in view of Neeman.

Applicant argues Neeman does not cure the deficiencies of "for each node in the second data structure determined to have received a change from a corresponding node in the first data structure, attempting to access the corresponding node in the first data structure, or if the corresponding node in the first data structure is inaccessible, preventing the change from occurring".

Examiner respectfully disagrees. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Therefore, examiner believes the arguments against Neeman are irrelevant because, the Neeman reference was not relied upon in order to reject the particular limitations stated above.

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Applicant argues, Holenstein does not disclose, "identifying nodes in the first data structure for which a change to the second data structure creates a collision to a software application maintaining the first data structure".

Examiner respectfully disagrees. As stated in the office action, Holenstein discloses at paragraph [0134], wherein if a failure is detected that is indicative of a collision, then the transaction is stopped in the local application program. For further clarification on the steps taken paragraph [0132] gives a more details explanation. Therefore, examiner believes the limitation to be fully disclosed.

Applicant's arguments with respect to claim 8 have been considered but are moot in view of the new ground(s) of rejection.

Points of Contact

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chelcie Daye whose telephone number is 571-272-3891. The examiner can normally be reached on M-F, 7:00 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Gaffin can be reached on 571-272-4146. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chelcie Daye
Patent Examiner
Technology Center 2100
January 12, 2007

Sana Al-Hashemi